Mohave County Miner.

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The Future of Copper.

Nineteen cents a pound is today the price of copper, and Boston authorities state that it will be twenty cents almost immediately. What is the meaning of it?

The output of copper has for twenty-five years past been steadily and almost uniformly increasing at the rate of ten per cent per annum. Yet at no time in recent years have stocks, either in this country or abroad, been so low. There are under promising development great numbers of copper prospects—some of them huge as to the quantity of ore exposed. In Alaska, through British Columbia, Oregon, Utah, California, Arizona, and into Mexico, copper mines are producing and others are being prepared for production. Nevada is to be added to the list of copper states. Montana is increasing its output and Michigan is holding its own. And still stocks decrease, orders are hooked for months ahead and the price climbs. It is no ordinary demand that has made possible so extraordinary a condition.

The civilized world is at the beginning of an industrial revolution, whereby a vast economy is to be applied. The industries of manufacturing nations are based upon motive power, which has until recently been another name for coal. Modern progress and civilization have centered in those countries which have produced coal most abundantly. Next to gold, which buys all things, cheap power is most essential to prosperity, for to it come raw materials, and men to work them, and commerce and profit. While coal was the cheapest source of power, it was king. It is so no longer.

The harnessing of Niagara Falls marked the beginning of a new era in industrial history, to the development of which copper in vast quantity is essential. The energy of water, flowing under pressure and generating electricity to be transmitted through copper wires to distant consuming points, and there converted into power, was demonstrated to be, within certain distances, cheaper than coal generated steam power.

It became at once evident that throughout the world, in every country possessed of mountains and streams, there is available an inexhaustible source of power and heat. The manufacturing nations are busily developing the energy of their streams for industrial purposes, and the power so derived has become the successful competitor of coal, is upbuilding new manufacturing centers within reach of its transmission lines, is undermining the prosperity of old centers too distant to be served by them. Water power, electrically transmitted, must hereafter be a prime factor in industrial progress for its economy reduces the cost of production. It cannot be disputed that the manufacturing nations will develop, to the fullest extent, every available water power within their borders; and that for transmission purposes alone, an incalculable tonnage of copper will be required.

Nor is this all. So serious has become the competition of water power that coal producers in this country are preparing to convert their coal into power at the mines and to transmit this electrically to consuming points, rather than to transport the coal to the same points. It has been determined that, within certain limitations of distance, the energy of coal may be more cheaply delivered through copper wires, than the coal itself can be delivered over steel rails. This principle, logically carried out, will cause the establishment of power plants (in countries or districts distant from coal producing areas, and where no water power is available) along main lines of transportation, and at seaport towns, whence power may be transmitted to consuming points. In many parts of the United States, in England, Germany, Belgium, and in less degree in many other countries, such systems are fast becoming matters of necessity for the maintenance of international trade competition.

Such is the industrial revolution the world is facing today. Though it has already begun, its accomplishment will take many years. It means that henceforth, and increasingly, the rivers of the earth are to furnish light, heat and power through countless miles of copper wire. It means that the energy of coal must be transmitted, wherever transportation of the coal itself may be avoided—and through copper wire. It means a consumption of copper compared to which the demands for telegraph and telephone lines, lighting plants and trolley systems are paltry.

Copper producers are straining every resource to increase their output, and the copper areas are being diligently explored for new mines. They are needed—nor can too many be found.—Exchange.

An Electric Home.

Engineers say this will be an "electric year." Electricity is soon to operate all the railroads in and around New York City. It is sending the trolley car and the telephone to the remotest rural districts. The incandescent and other new styles of electric light are everywhere supplanting the old fashioned gas or oil street lamp. And now the mystic current has begun to revolutionize conditions of living in homes.

The first "electric home" has just been completed in one of the cities of upper New York state. This home is equipped with almost every modern electrical device, and it is a varitable wonderland of marvels. The owner, H. W. Hillman, believes the time is not far distant when homes all over the world will be fully equipped with electricity for lighting, heating and power, as commonly as oil and gas are now used. The greater cleanliness, healthfulness, safety and convenience of electricity as compared to gas, will, he contends, result in the universal use of electricity.

This remarkable dwelling has electric lights in every room, in every closet, in every dark corner. Instead of the conventional bell burglar alarm, Mr. Hillman has an electric switch next to his bed by pushing which he can turn on every light in his house. This would terrify any thief more than a dozen revolvers. In the sewing room a machine run by an electric motor saves endless trouble.

The dining room has an electric chafing dish, a corn popper, a coffee percolator, and a luminous radiator. The bath room is an astonishing place. An electric immersion coil heats the water, when the house furnace is shut down in summer. There is a little boiler to supply hot water for shaving.

One of the greatest features of this "electric home" is the kitchen, where every article of food cooked gets its heat from electricity. There is no kitchen stove, and all the devices for cooking rest on an ordinary wooden table. The outfit includes an oven, cereal cooker, frying pan, vegetable boiler, gridiron and meat boiler. The oven has a regulating switch for securing high, low and medium grades of heat, by a turn of the handle. In size it is about the same inside dimensions as the old style kitchen stove. A novel feature of this oven is two glass windows in the door, through which meat or bread may be seen cooking, without opening the oven. This arrangement is secured by placing an incandescent lamp in the back of the oven.—Redlands Citrograph.

Crosscut Tunnels.

In a region in which there may be several other veins, most of them unimportant or valueless, those running the crosscut tunnels are liable to be puzzled as to which of the veins encountered is their particular vein on which they ought to stope or unraise to the surface. The vein at a depth of several hundred feet may look as poor and so different from that on the surface, or may have resolved itself into a mere silt in the rock or a pinch containing, locally, no vein or ore matter, that it is not recognized by the tunnel diggers and they go marching on into the country; or the dip may have changed or the vein be so faulty that it is not found at the place where it was shown by the survey of the mine supposing that survey was ever made as it very often is not. Crosscut tunnels generally prove much larger and cost much more than was bargained for when they were first contemplated. Planned out on the prospectus, a long crosscut tunnel is only legitimate when a vein or series of veins have been well proven for several hundred feet both in depth and laterally, and considerable ore developed and on account of the presence of water it can be worked cheaper by a crosscut tunnel than by a shaft. The proper course, as we have said, to pursue on a young unproven prospect, outcropping on the surface, in such a position as to require shafting, is to follow it down by shafting till we have gone well down below the oxidized zone into the unoxidized and obtained some idea of its probable permanent character and future values and needs as regards equipment, etc.

All that is needed on a young prospect to prove it up, whether it be by shafting or tunneling, is at first three or four men at most, to break muck and hoist with a common windlass and bucket for 50 to 100 feet: then this may be replaced by a horse whim which will carry the shaft down to 200 feet. By this time, and after you have done a little drifting, you will get to know whether or not your prospect is going to amount to anything and to warrant the erection of a plant and steam hoist. You may now also be in condition to get some idea as to whether it will warrant a mill of some kind and may consider the best process of treatment to be used, such as smelting, cyaniding, pyritic smelting, etc.—Mines and Minerals for April.

Black Diamonds Costly.

The fact that black diamonds for drilling purposes are now selling above 70$ a karat, when 30 years ago, in the infancy of the trade, they could be bought for 5$, serves to call attention to the great amount of diamond drilling which has been done in the Lake Superior iron region. On the Mesaba alone there are probably more than 20,000 drill holes, averaging in the neighborhood of 350 feet in depth, or a total of 7,000,000 feet or better. In a small area at Tower, on the Vermillion range, there are 400 holes, and probably more than that number in the immediate vicinity, all drilled by the Steel Corporation's predecessor there. On three 40-acre tracks of the famous Section 30 property there are 15,000 feet of diamond drill holes, and there are similar spots scattered along the Vermillion from end to end. There are thousands of holes in the Menominee and Marquette ranges. The Cleveland Cliffs Company had six drills in operation for six months, day and night, in the basin where its Maas mine is now being opened, and it was on the Marquette range that the Clergue Syndicate bored a hole 2,400 feet deep, looking for the formation, the deepest hole probably ever put down in the region. During the past year there has been a remarkable revival in diamond drilling, and at the present time there are more drills in commission than ever before in the history of the iron ore fields.—Mining World.

The American Boy for May.

Certainly the publishers are sparing neither effort nor money in placing before American boys the brightest, best, and most inspiring kind of literature. The May American Boy is simply filled with what boys want. Mr. Stratemeyer's new serial, "In Defense of His Flag," a splendid story of two boys fighting on opposite sides in the Civil War, begins in this number. There are 86 fine illustrations. Subscription price, 1$ a year. The Sprague Publishing Co., Detroit, Mich.

Eggs, fresh from our hennery, at Kingman Meat Market.